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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,713	01/29/2004	Brian E. Kruschwitz	85173SHS	5668

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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A.

Office Action Summary

Application No.

10/767,713

Applicant(s)

KRUSCHWITZ ET AL.

Examiner

ARMANDO RODRIGUEZ

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 19-24 is/are rejected.
- 7) ☒ Claim(s) 15-18 and 25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No: ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/17/2004</u> ; <u>2/18/05</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed February 18, 2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

No copy of references EP 1184946 A1 and EP 0718936 A1 has been received.

Claim Objections

Claims 9-11 are objected to because of the following informalities: claims lack antecedent for the limitation of "selectable sized hole". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kozlov et al (PN 6,160,828).

Regarding claims 1, 12, 19,

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Figure 7 illustrates an organic semiconductor laser (351) for use in optical communications (column 1 lines 58-62), having a substrate (113) [applicant's substrate], a mirror (111) [applicant's bottom mirror] formed on the substrate, an organic active region with an emissive layer (110b) [applicant's active region] and an external mirror (112) [applicant's external mirror], where mirrors (111) and (112) form the resonant cavity. In column 3 lines 35-45, discloses the active region (110) lasing when pumped by optical or electrical means [applicant's optical pumping means]. The laser system of figure 7 will inherently provide a wavelength and at least one mode. Column 3 line 66-67 discloses the use of a laser as an optical pump.

Regarding claim 2,

Figure 7 illustrates mirror (112) at a distance t_1 , where the distance as illustrated and not drawn to scale portrays a distance greater than the emissive layer (110b).

Regarding claim 13,

Figure 7 illustrates laser emission beam as perpendicular to the organic active region.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al (PN 6,160,828) as applied to claim 1 above and in view of Garnache et al (PN 6,611,546).

Regarding claims 4,5,

Kozlov et al is silent as to providing a birefringent tuning element.

Figure 16 of Garnache et al illustrates the frequency selective element as containing a tunable birefringent crystal (35) [applicant's birefringent element]. See column 29 lines 26-62.

Therefore, it would have been obvious to person having ordinary skill in the art to use the tunable birefringent crystal of Garnache et al within the VECSEL of Kozlov because it would provide tuning of the laser.

Regarding claim 6,7,

Kozlov et al is silent as to providing a Fabry-Perot etalon.

Figure 15 of Garnache et al illustrates a frequency selective element as containing a Fabry-Perot etalon (31) [applicant's Fabry Perot etalon]. See column 27 lines 57-66.

Therefore, it would have been obvious to person having ordinary skill in the art to use the Fabry-Perot etalon of Garnache et al within the VECSEL of Kozlov because it would provide tuning of the laser.

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Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al (PN 6,160,828) as applied to claim 1 above and in view of Shoshan (PN 4,731,788).

Regarding claims 8-11,

The use of an aperture within the cavity of a laser system for mode selection is notoriously well known in the art, as documented in 1988 by Shoshan and described in column 3 lines 55-67.

Claims 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al (PN 6,160,828) as applied to claim 1 above and in view of Kahen et al (US 6,876,684).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer

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in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Regarding claim 14,

Kozlov et al is silent as to the active region having a plurality of organic gain material aligned with peak intensity and a plurality of spacers.

Kahen et al illustrates in figure 2 an organic laser having a periodic gain region (100) [applicant's plurality of organic gain material], where the peak of the standing wave is aligned with the periodic gain region and also illustrates a plurality of spacers (110).

Therefore, it would have been obvious to a person of ordinary skill in the art to combine the periodic gain region of Kahen et al with the laser of Kozlov et al because it would improve power conversion efficiency, column 2 lines 38-45 of Kahen et al.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al (PN 6,160,828) as applied to claim 1 above and in view of Craig et al (US 5,761,234).

Regarding claims 20-22,

Kozlov et al is silent as to the optical pumping means being an array of addressable light emitting diodes.

However, the use of array of laser diodes as an optical pump source is well known in the art, as evident by Craig et al, which illustrates in figures 4 and 5 the use of

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laser array (15) having individual emitters including a lens array (21). Column 15 lines 1 teaches the laser array (15) as individually addressable.

Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al (PN 6,160,828) in view of Cowan et al (PN 4,469,407).

Regarding claim 23,

Kozlov et al is silent as to the use of an apodizing filter.

However, the use of laser apodizing filter is well known in the art as documented in 1984 and described in the abstract of Cowan et al.

Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kozlov et al (PN 6,160,828) in view of Laurell (US 6,259,711).

Regarding claim 24,

Kozlov et al is silent as to the substrate having a spherical surface.

Laurell illustrates in figure 8b a laser having a curved substrate (14a) [applicant's spherical substrate].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Laurell to the laser of Kozlov et al because the curved surface will allow for focusing of the pump beam, column 10 line 63 of Laurell.

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Allowable Subject Matter

Claims 15-18 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ARMANDO RODRIGUEZ
Examiner
Art Unit 2828

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